

Downtown Aquarium Under Construction 875 Howard Street To Open This Spring

Construction is well under way for the Academy's downtown aquarium and museum at 875 Howard Street, which is scheduled to open in April. The building, located between 4th and 5th streets, across from the new Moscone West Convention Center, will house the vast majority of the animals from Steinhart Aquarium, rotating exhibits about the natural world, and 18 million natural history specimens, as well as over 300 Academy staff members. The Academy will remain at this downtown location until 2008, when its new home in Golden Gate Park is scheduled to be completed.

The six-story building at 875 Howard Street will house public exhibits and facilities on the first two floors. The aquarium will be primarily located on the first floor, with a naturalist center on the second floor.

"One of the most striking elements at 875 Howard Street will be on both the first and second floors: the two-story coral reef tank," said Scott Moran, transition project manager. "We've already cut a hole in the ceiling that separates the first and second floors to accommodate this 18-foot deep tank. The main visitor staircase between the floors will be directly adjacent and will give visitors the opportunity to see the tank at every level."

"Special artificial sunlight will be tested on this tank in preparation for the much, much larger coral reef tank that will eventually be installed in Golden Gate Park.

We'll be constantly monitoring the tank to see which species of coral and fish do well at particular depths with the lighting system."

One of the most exciting features of the new aquarium is that visitors will be able to see everything that normally has gone on behind-the-scenes. Animal feedings, tank cleanings, testing, and much more will be happening on the public floor, and will sometimes offer the public the opportunity to get directly involved.

Other phases of construction are also underway, including the installation of aquatic life support systems, a flexible lighting grid to support changing exhibits, and a backup generator on the roof to keep our animals alive in case of power failure. Look for parts of the building's exterior to be painted in the coming weeks and for signs to start going up soon.

The first fish will likely start moving into the building in the second half of February. Once they've had a chance to acclimate to their new homes and the other exhibits are finished, we'll be opening for visitors.

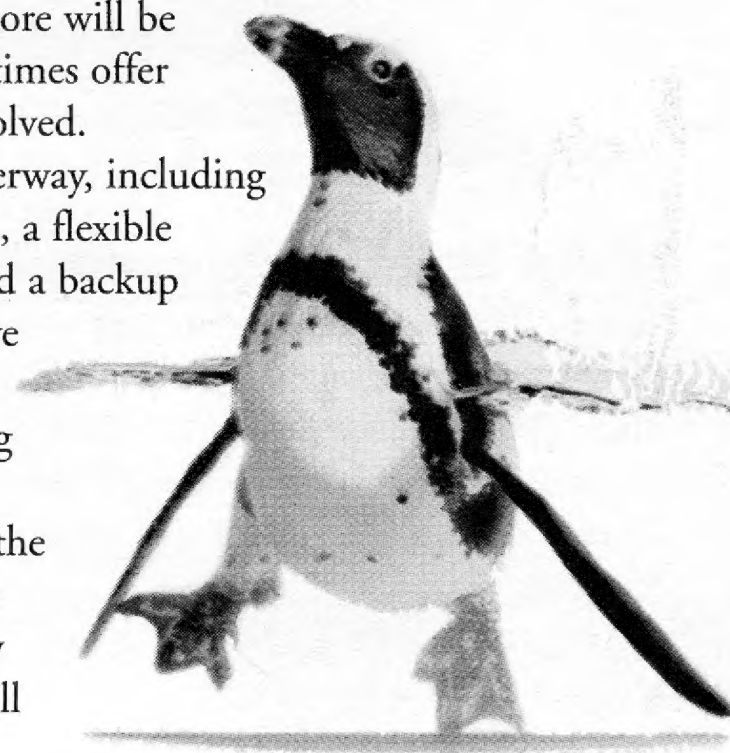


PHOTO: DONG LIN

Message to Members

The last week of December was extraordinary. It seemed as if the whole of San Francisco was beating a path through the downpours to our doors. Forty thousand people came through the museum during the last three days of 2003. Probably most of you had already taken advantage of our special Members' nights and mornings to avoid the crowds, but others I suspect, like me, couldn't resist one last nostalgic walk through the halls.

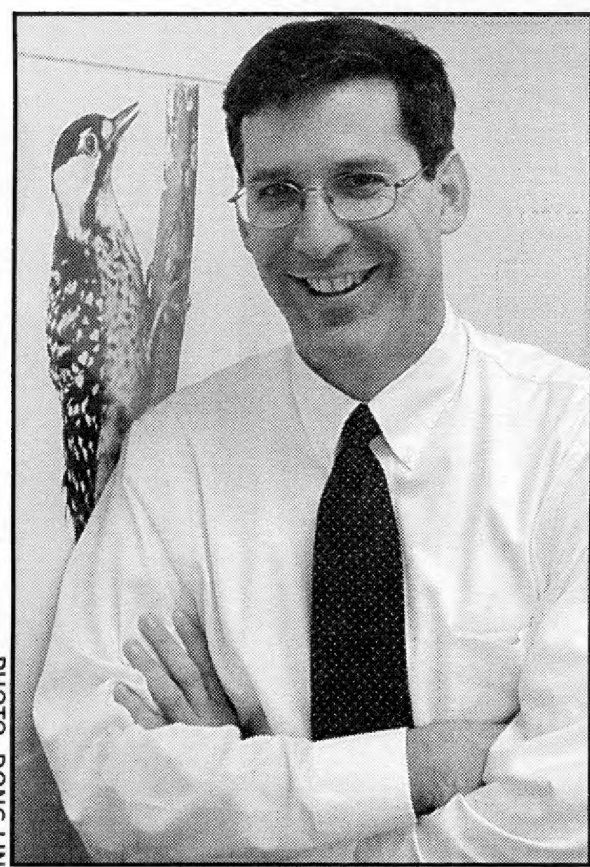


PHOTO: DONG LIN
Patrick Kociolek, Ph.D.

We talked to some of the final visitors as they were leaving on New Year's Eve. "I took all the Academy classes when I was a kid. I'm an engineer now, and it's all because of this place," one man reminisced, as his own wide-eyed child gazed up at a dinosaur.

"The Academy is just something that you have to come back to see," said another longtime visitor. "But I think it's great that you're going to go for it. The next generation is going to have a wonderful place for science."

"Every visit to the Academy has been as enlightening as it has been inspiring," and said a third, "Thank you Academy! You practically raised me. Hurry back."

For me, too, it was a time of mixed emotions, and all strongly felt. Yes, it was sad to say goodbye to exhibits and displays that

had been there for so many years, but I look forward with excitement to the promise of renewal and of meeting the educational challenges of a new century. If a natural history museum must close its doors, it is appropriate that it should happen in midwinter when the Earth, too, closes down. Although the Academy will take a little longer, some four years, to come into full flower, we will surface again this spring in our exciting, new transitional space at 875 Howard Street in downtown San Francisco. We'll see you there.

— Patrick Kociolek
Executive Director

Smart, Social and South of Market: ANTS!

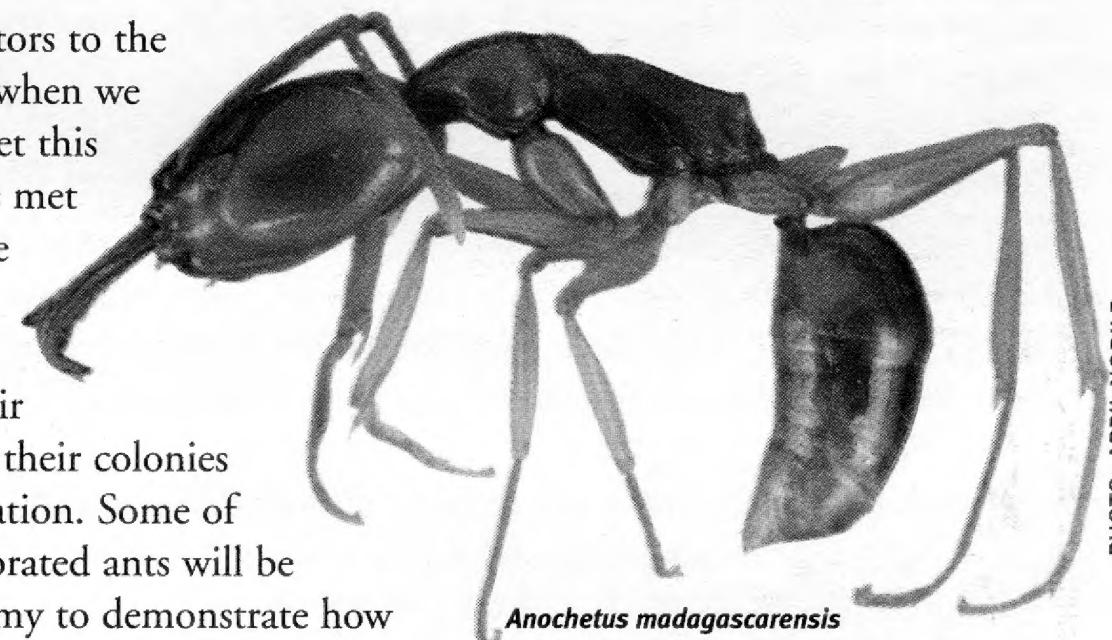
Ants will astound visitors to the Academy of Sciences when we open on Howard Street this spring. Everybody has met an ant, but few people know much about them. Ants are amazing animals. Their societies are complex; their colonies are marvels of cooperation. Some of the world's most celebrated ants will be on hand at the Academy to demonstrate how they really live and work.

Visitors will have a chance to see the notorious Madagascar Dracula ant – a new species discovered by Academy scientist Brian Fisher, Ph.D. while on expedition in Madagascar. The Dracula ant is thought to be a missing link in the evolution of ants from wasps.

In addition, visitors will have the opportunity to watch as a colony of army ants makes its thrice-daily journey across a bed of white sand in search of food. The highly regimented nature of the army ant ensures that there will always be a show for viewers. Through sophisticated use of audio and video amplification, you'll be able to see and hear their movements up close.

A special containment area is under construction to ensure that none of our foreign guests escape. Any potential jail breakers will have to get through two safety zones to make it to the outside world. Even so, visitors will have every opportunity to see the ants work in their own environment.

We'll tell you more about the exhibit in our next issue, just prior to our opening. Until then, check out our web site, www.calacademy.org, for the latest updates.



Anochetus madagascarens

PHOTO: APRIL NOBILE



Tetramorium sp.
PHOTO: APRIL NOBILE

There will be a gap between the closing of our facility in Golden Gate Park and the opening of our facility downtown. As a courtesy to our members, all memberships will be extended for the length of this gap period to ensure that you won't lose any of the value of your paid membership. If you have any questions, please call the Membership Office at (415) 750-7111.

Educational Programs in Transition

I want to take this opportunity to tell members about the exciting variety of educational programming opportunities available to you as the Academy prepares for our transition period at 875 Howard Street. Many current programs will continue, and we will also offer some brand new ones, both on-site and off.

Members' Lectures will continue at the Zeum Theater (see page 3), Conversations will continue at the Herbst Theatre (see page 3), and the Benjamin Dean Lectures and Academy Special Lectures will be at the Jewish Community Center (see below and page 3). Specialized programs such as Teacher Services with its BioForum symposia and professional development workshops will continue (see below), as will Field Studies programs and our Careers in Science high school internship program. Our outreach program for schools and community-based organizations will expand and offer an integrated menu of earth, ocean, and space-themed programming. We will have a continuing need for docents and other volunteers, so feel free to let us know if you are interested in joining the ranks of our wonderful volunteers.

As part of the necessary reductions that are being made across the Academy during this time of transition, Youth & Adult Courses will be downsized temporarily. Having to reduce any program is difficult, and this decision was made only after careful analysis of overall member and institutional needs. We will begin expanding our course offerings as soon as possible, and will keep members informed as details are worked out. Be sure to check the Academy's web site at www.calacademy.org for the most up-to-date information, and in the meantime, don't forget that there are courses available in February and March (see below).

At 875 Howard Street, in addition to Steinhart Aquarium and natural history exhibits, there will be a new early childhood education and playspace, as well as a Naturalist Center that will have library resources, a reference collection of natural history specimens, and drop-in activities for people with questions about the natural world. There will also be more facilitators on the public floor. But more about that next time. I can't wait to see you all there!

— Meg Burke
Director of Education

Youth & Adult Courses

California Delta Cruise

Search for raptors and other birds as you cruise aboard the *Delphinus* on the California Delta. Observe countless waterfowl, such as tundra swans, snow geese, sandhill cranes, and numerous ducks – all finishing their winter season in the delta before heading north. Boat departs from Antioch Marina. Instructed by captain/naturalist Ronn Patterson and naturalist David Wimpfheimer. **Adult Field Trip – Sunday, February 8, 8:30 am–5 pm; \$90 members/ \$100 non-members**

Winter Birding at Pepperwood

Survey the winter birds of the oak woodlands, creeks, and grasslands at the Academy's Pepperwood Preserve in Santa Rosa. Learn to identify these birds by sight and call on this Valentine's Day hike of three miles. Instructed by Academy curatorial assistant Moe Flannery. **Adult Field Trip Suitable for Ages 15 and Up – Saturday, February 14, 8 am–noon; \$20 members/ \$30 non-members**

Shollenberger Park

Discover a paradise for wintering birds in Petaluma's Shollenberger Park. Take in excellent views of the abundant birdlife on a walk along a flat, two-mile perimeter path through this rich wetland. Instructed by birder Dan Murphy. **Adult Field Trip – Saturday, February 21, 8:30–11:30 am; \$20 members/ \$30 non-members**

Mosses and Lichens on Mount Tamalpais

Take a leisurely walk along Cataract Creek, just north of the Golden Gate Bridge, to explore the rich diversity of non-flowering plants. Instructed by Academy senior curatorial assistant Mona Bourell. **Adult Field Trip – Sunday, February 22, 10 am–2 pm; \$20 members/ \$30 non-members**

Secret Birding Spots: The City's Southeastern Shore

Explore this hidden birding site that, despite having a greater species diversity than Crissy Field, hasn't received as much attention as its wetland counterpart across the city. Instructed by birder Alan Hopkins. **Adult Field Trip Suitable for Ages 15 and Up – Saturday, March 6, 9 am–1 pm; \$20 members/ \$30 non-members**

i For more details, including other course offerings, call (415) 750-7100 (press option 2) or visit www.calacademy.org/education.

Benjamin Dean Lectures

Astrobiology – A New Way of Looking at the Universe

David Morrison, Ph.D.

Senior Scientist, NASA Astrobiology Institute, Academy Fellow & Science Trustee

Astrobiologists are exploring three broad questions: (1) How does life begin and evolve? (2) Is there life elsewhere in the universe? (3) What is the future of life on Earth and beyond? We cannot answer these questions today, but we are developing the tools that may lead us to fundamental new insights in both astronomy and biology.

Monday, February 9, 7:30–9 pm

Jewish Community Center of San Francisco

\$3 for tickets; Tickets can be purchased by calling (415) 750-7141, on page 5, or at the door, when available.



David Morrison, Ph.D.

Where Do We Go From Here? A Search for Other Earths

Debra Fischer, Ph.D.

University of California at Berkeley

Since the mid-1990s, astronomers have detected more than 100 planets orbiting nearby stars. How do these planets form? Is our solar system unusual? Why didn't the first stars in our Galaxy have any planets? What are NASA's plans for the next generation of planet searches?

Monday, March 1, 7:30–9 pm

Jewish Community Center of San Francisco

\$3 for tickets; Tickets can be purchased by calling (415) 750-7141, on page 5, or at the door, when available.

19th Annual BioForum

Biodiversity Hot Spots Near and Far: California, Coral Reefs, and Rainforests

Coral reefs cover just two-tenths of one percent of the oceans' area, but are estimated to provide habitat for over one-third of all marine animal species. Rainforests cover two percent of the Earth's surface and are home to over half of the plant and animal species on Earth. Hotspots of world biodiversity are not all far away and tropical – seventy percent of California is recognized as an international biodiversity hotspot because of the large number of endemic plants (2,125), overall species richness, and threats to their existence. Scientists discuss their research and perspectives on the world's biodiversity hotspots near and far.

What is it? BioForum, now in its nineteenth year, is a series on current science topics of interest to educators. Each BioForum includes three presentations by renowned scientists related to the selected topic. As one of the teachers wrote: "The speakers were vibrant, funny, and, of course, knowledgeable. I scrapped my lesson plans for the next two days to talk about it – the kids loved it!"

Who attends? Most attendees are high school science teachers; however, a number of middle school science teachers, community college teachers, docents, student teachers, and interested members of the public attend as well. You can download a registration form from the Academy's web site: www.calacademy.org/education/bioforum

Where is it held? This year, BioForum is co-hosted by the California Academy of Sciences and the Oakland Museum of California. Please note that this BioForum will be held at the Oakland Museum of California in Oakland.

Saturday, February 7; Registration starts at 8:15 am; 9 am–12:30 pm

Oakland Museum of California

\$15 members & non-members/ \$10 students

Tickets can be purchased by calling (415) 750-7145. For more information, visit www.calacademy.org/education/bioforum/bioforum2003-2004/2003-2004.html

MODERATOR

Margaret G. Burke, Ph.D.

Curator of Education and Director of the Education Division
California Academy of Sciences

SPEAKERS

Susan Harrison, Ph.D.

Serpentine Soils and Other Reasons for California's Plant Biodiversity

Professor, Environmental Science and Policy; University of California at Davis

Terrence Gosliner, Ph.D.

Rainforests of the Ocean: Coral Reefs' Endangered Biodiversity

Provost and Senior Curator in Invertebrate Zoology and Geology
California Academy of Sciences

Terry Erwin, Ph.D.

Mapping Patterns of Biodiversity for Beetles Across the Western Amazon Basin:

A Preliminary Case For Improving Conservation Strategies

Research Entomologist; Smithsonian Institution

LECTURES

Jewish Community Center of San Francisco

3200 California Street at Presidio Avenue,
San Francisco

Public Transportation

The following MUNI bus lines stop directly in front:
#1 California, #3 Jackson, #4 Sutter, #43 Masonic

Parking is available at the following locations:

- Beneath the JCCSF in the building's garage.
- Across the street from the JCCSF in the UCSF Laurel Heights campus parking lot.

Zeum Theater

221 4th Street at Howard Street, San Francisco

Public Transportation

BART & MUNI – disembark at the Powell Street Station. Exit to 4th and Market streets. Head south on 4th Street for two blocks. Turn left on Howard Street.

Parking is available at the following locations:

- The 5th and Mission Garage, on Mission Street between 4th and 5th Streets.
- The Moscone Garage, on 3rd Street between Howard and Folsom Streets.

Conversations at the Herbst Theatre 2004

Presented by City Arts & Lectures, Inc.
All Programs at Herbst Theatre, 8 pm

- February 25 Wednesday** **Brian Greene, Ph.D.**
Professor of Physics, Columbia University
The Fabric of the Cosmos
The Elegant Universe
In conversation with Roy Eisenhardt
- April 7 Wednesday** **Simon Winchester**
writer
Krakatoa, The Professor and the Madman
The Map That Changed the World
In conversation with Michael Krasny
- April 13 Tuesday** **Eric Schlosser**
investigative reporter
Fastfood Nation
In conversation with Jerry Lowenstein, Ph.D.
- April 28 Wednesday** **Paul Ekman, Ph.D.**
Professor of Psychology, UC San Francisco
Emotions Revealed, Telling Lies
In conversation with Nina Jablonski, Ph.D.
- May 26 Wednesday** **Diane Ackerman**
naturalist, poet
An Alchemy of Mind, Cultivating Delight
A Natural History of the Senses
In conversation with Angie Coiro
- June 2 Wednesday** **The Annual Claire Matzger Lilienthal Distinguished Lecturer Julie Gerberding, M.D.**
Director, Center for Disease Control and Prevention
In conversation with Paul Volberding, M.D.

Lecture: \$16 members/ \$18 non-members
Series: \$90 members/ \$102 non-members

To order tickets, please call City Box Office at
(415) 392-4400 or visit www.cityboxoffice.com

California Academy of Sciences does not process ticket orders for these lectures.

This series is made possible, in part, by a grant from the Richard and Rhoda Goldman Fund.

We are pleased to inform you that the lecture series and all of its core components will continue throughout the Academy's transition. However, since the Howard Street facility will not have an auditorium, the lectures will be hosted at off-site venues. All venues are easily accessible through public transportation and offer viable parking options. Thank you in advance for your continued support of the Academy's exciting lecture programs.

Special Lecture at the Jewish Community Center

Barry Lopez

Nature writer, essayist: *Light Action in the Caribbean, Arctic Dreams, Of Wolves and Men, About This Life*

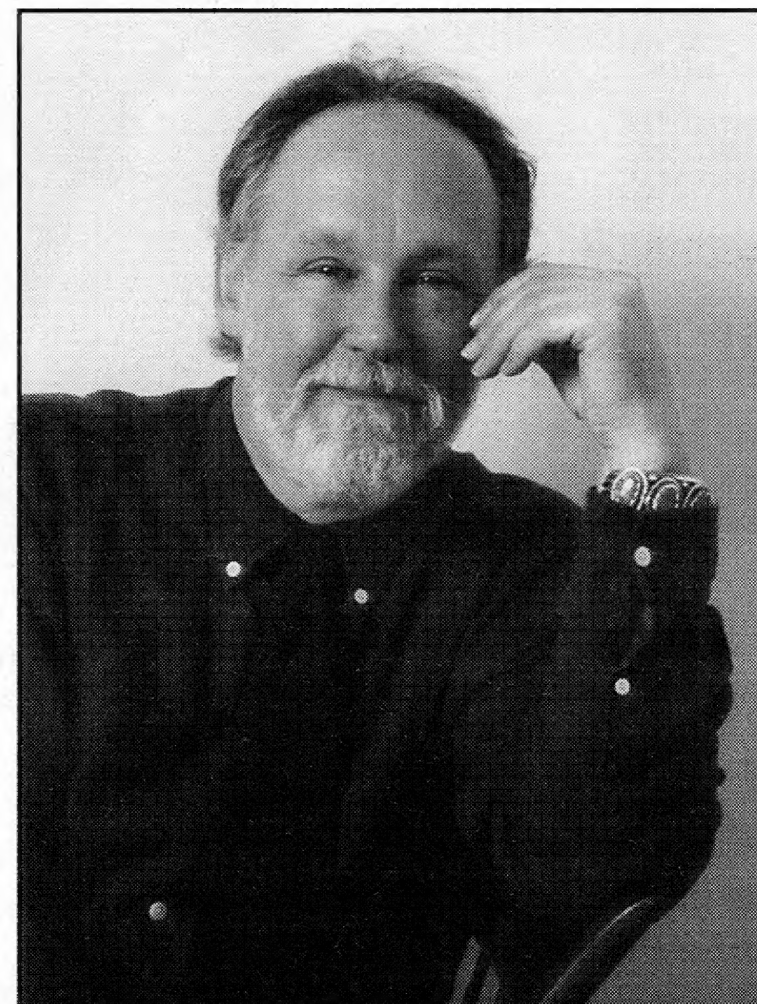
Join us for an intimate evening with Barry Lopez, an extraordinary writer and imaginative storyteller. Lopez shares his insights on mankind in the natural landscape and society's need to reconnect with the natural world. Lopez is the recipient of the Literature Award from the American Academy of Arts and Letters, the John Burroughs Medal, Guggenheim and Lannan fellowships, Pushcart Prizes in fiction, and other honors.

Friday, March 12, 7:30 pm

Jewish Community Center of San Francisco

\$6 members & students/ \$8 non-members

Tickets can be purchased by calling (415) 750-7128, on page 5, or at the door, when available.



Barry Lopez

PHOTO: NANCY CRAMPTON

The Leakey Speaker Series on Human Origins Co-sponsored by the Leakey Foundation



The Leakey Foundation

The Adaptable Hand-Axe and Human Origins Richard Potts, Ph.D.

In 1942, Louis and Mary Leakey started scientific work at Olduvai, one of Africa's most renowned Acheulean hand-axe sites. Modern dating methods now make Olduvai the most precisely dated site in the world spanning the past one million years. Dr. Potts, the director of the Smithsonian's Human Origins Program, suggests that rather than exhibiting a prolonged period of unchanging human behavior prior to the origin of *Homo sapiens*, the hand-axe maker could adapt to dramatic environmental variability, and colonized ecological communities throughout Africa.

Thursday, February 26, 7:30 pm

Jewish Community Center of San Francisco

\$6 members & students/ \$8 non-members

Tickets can be purchased by calling (415) 750-7128, on page 5, or at the door, when available.

Species Diversity in Human Evolution Fred Spoor, Ph.D.

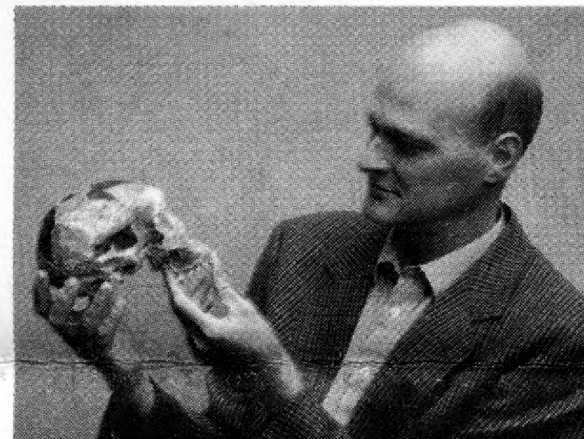
Human evolution has often been portrayed as a single succession of fossil species culminating in the emergence of modern humans. However, research during the 1990s has demonstrated that from about 2.5 million years ago, multiple, contemporary species evolved. Join Dr. Spoor, professor of evolutionary anatomy at University College London, as he discusses how new fossil finds from Kenya support this scenario, and even extend the time back further to 3.5 million years ago.

Thursday, March 25, 7:30 pm

The Jewish Community Center of San Francisco

\$6 members & students/ \$8 non-members

Tickets can be purchased by calling (415) 750-7128, on page 5, or at the door, when available.



Fred Spoor, Ph.D., collaborated closely with Meave Leakey in the discovery of a new species of human ancestor, *Kenyanthropus platyops*.

PHOTO: COURTESY THE LEAKEY FOUNDATION

Academy Members' Lectures at Zeum Theater

The Most Peculiar Dolphins Healy Hamilton, Ph.D.



Academy scientist Healy Hamilton, Ph.D. uses a modified crossbow to obtain small pieces of tissue from live river dolphins for genetic analysis.

The world's four species of freshwater dolphins are quite different animals from their more familiar marine cousins. Join Academy scientist and river dolphin expert Dr. Hamilton, as she investigates the evolutionary mystery of how the Amazon, La Plata, Ganges, and Yangtze river dolphins came to inhabit four disjunct river systems on three different continents. Travel with her into the farthest corners of the Amazon in search of the legendary pink river dolphin, whose DNA sheds light on where river dolphins fit into the cetacean Tree of Life.

Monday, February 9, 2 & 7:30 pm; Zeum Theater
Free to members/ \$4 Zeum members/ \$8 non-members
Tickets can be purchased by calling (415) 750-7128, on page 5, or at the door, when available.

The Journey of Man Spencer Wells, Ph.D.

Showing how the secrets of human evolution are hidden in our genetic code, Dr. Wells reveals the ways in which developments in the revolutionary science of population genetics have made it possible to create a family tree for the whole of humanity. Replete with marvelous anecdotes and remarkable information, from the truth about the real Adam and Eve, to the way differing racial types emerged, *The Journey of Man* is an enthralling, epic tour through the history and development of early humankind.



Spencer Wells, Ph.D. wrote and presented the PBS/National Geographic film *The Journey of Man*.

PHOTO: MARK READ

Monday, March 8, 2 & 7:30 pm; Zeum Theater
Free to members/ \$4 Zeum members/ \$8 non-members
Tickets can be purchased by calling (415) 750-7128, on page 5, or at the door, when available.

FEBRUARY

7 SATURDAY

19th Annual BioForum

Biodiversity Hot Spots Near and Far: California, Coral Reefs and Rainforests. See page 2 for details. Registration starts at 8:15 am, 9 am–12:30 pm; (415) 750-7145; Oakland Museum of California.

8 SUNDAY

California Delta Cruise

Pre-registration required for this adult field trip. See page 2 for details. 8:30 am–5 pm; (415) 750-7100.

9 MONDAY

The Most Peculiar Dolphins

Members' lecture with Healy Hamilton, Ph.D. See page 3 for details. See page 5 for tickets. 2 & 7:30 pm; (415) 750-7128; FREE for members, \$4 Zeum members, \$8 non-members; Zeum Theater.

Astrobiology – A New Way of Looking at the Universe

Pre-registration recommended for this Benjamin Dean Lecture with David Morrison, Ph.D. See page 2 for details. See page 5 for tickets. 7:30–9 pm; (415) 750-7141; \$3; Jewish Community Center of SF.

14 SATURDAY

Winter Birding at Pepperwood

Pre-registration required for this adult field trip, suitable for ages 15 and up. See page 2 for details. 8 am–Noon; (415) 750-7100.

21 SATURDAY

Shollenberger Park

Pre-registration required for this adult field trip. See page 2 for details. 8:30–11:30 am; (415) 750-7100.

22 SUNDAY

Mosses and Lichens on Mount Tamalpais

Pre-registration recommended for this adult field trip. See page 2 for details. 10 am–2 pm; (415) 750-7100.

25 WEDNESDAY

Conversations at the Herbst Theatre

Featuring Brian Greene, Ph.D. See page 3 for details. To order tickets, call City Box Office at (415) 392-4400 or visit www.cityboxoffice.com. 8 pm; \$16 members, \$18 non-members; Herbst Theatre.

26 THURSDAY

The Adaptable Hand-Axe and Human Origins

Leakey Lecture with Richard Potts, Ph.D. See page 3 for details. See page 5 for tickets. 7:30 pm; (415) 750-7128; \$6 members & students, \$8 non-members; Jewish Community Center of SF.



Richard Potts, Ph.D.

28 SATURDAY

Winter Birding

Search for birds in Golden Gate Park, and learn about what to look and listen for when identifying birds in the field. We'll look for Anna's hummingbirds, downy woodpeckers, ruby-crowned kinglets, pygmy nuthatches, red-shouldered hawks and more. Wear warm, layered clothing and walking shoes, and bring binoculars and water. Ages 8 and up. Reservations required; space limited. 9–11:30 am; (415) 750-7143; FREE; Meet at the Academy back entrance at Middle Drive Road. Weather permitting.

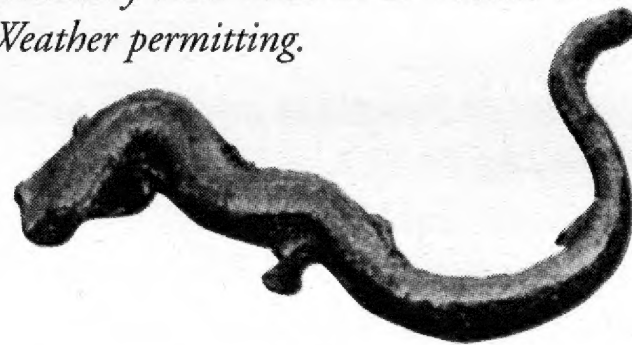


PHOTO: E. EUGENIA PATTEN

29 SUNDAY

Family Discovery Hike

Take a winter walk around Golden Gate Park and look for salamanders, frogs, millipedes, birds, and more. Wear warm, layered clothing and walking shoes, and bring binoculars and water. Ages 8 and up. Reservations required; space limited. 10 am–Noon; (415) 750-7143; FREE; Meet at the Academy back entrance at Middle Drive Rd. Weather permitting.



ABOVE PHOTOS: WILLIAM FLAXINGTON

MEMBER INFORMATION

ACADEMY CLOSED UNTIL SPRING 2004.

(See article on front page.)

Information Hotline: (415) 750-7145

Web site: www.calacademy.org

Email: info@calacademy.org

Public Programs: (415) 750-7143

Lectures: (415) 750-7128

Membership: (415) 750-7111

Library: (415) 750-7102

Education: (415) 750-7100

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e-mail info@calacademy.org with
"Academy Bytes" in the subject line



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Currently, there are no Traditional Arts Programs scheduled from January through April 2004. They are expected to resume after April 2004. For further information about Traditional Arts Programs, visit www.calacademy.org. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

MARCH

1 MONDAY

Where Do We Go From Here?

Pre-registration recommended for this Benjamin Dean Lecture with Debra Fischer, Ph.D. See page 2 for details. See page 5 for tickets. 7:30–9 pm; (415) 750-7141; \$3; Jewish Community Center of SF.

6 SATURDAY

Secret Birding Spots:

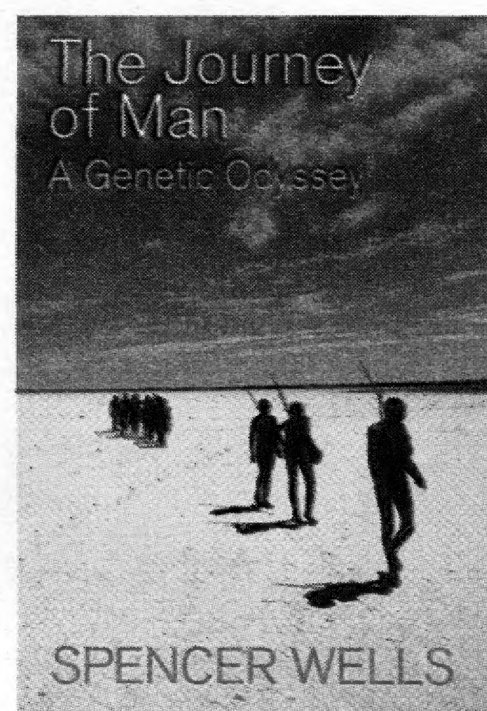
The City's Southeastern Shore

Pre-registration required for this adult field trip, suitable for ages 15 and up. See page 2 for details. 9 am–1 pm; (415) 750-7100.

8 MONDAY

The Journey of Man

Members' lecture with Spencer Wells, Ph.D. See page 3 for details. See page 5 for tickets. 2 & 7:30 pm; (415) 750-7128; FREE for members, \$4 Zeum members, \$8 non-members; Zeum Theater.



12 FRIDAY

Barry Lopez

Special lecture with Barry Lopez, nature writer and essayist. See page 3 for details. See page 5 for tickets. 7:30 pm; (415) 750-7128; \$6 members & students, \$8 non-members; Jewish Community Center of SF.

20 SATURDAY

Birdwatching for Kids

Search for birds in Golden Gate Park, and learn about what to look for or hear when identifying birds in the field. Wear warm, layered clothing and walking shoes, and bring binoculars and water. Ages 8–12. Reservations required; space limited. 10 am–Noon; (415) 750-7143; FREE; Meet at the Academy back entrance at Middle Drive Road. Weather permitting.

25 THURSDAY

Species Diversity in Human Evolution

Leakey Lecture with Fred Spoor, Ph.D. See page 3 for details. See page 5 for tickets. 7:30 pm; (415) 750-7128; \$6 members & students, \$8 non-members; Jewish Community Center of SF.

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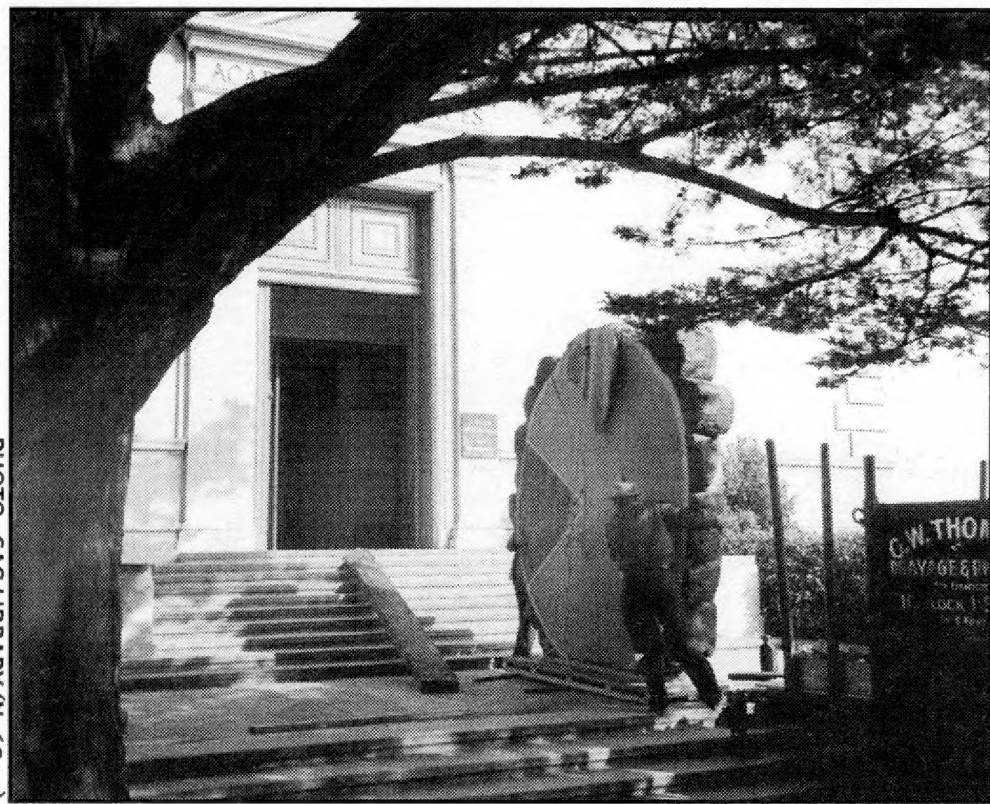
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In Retrospect

While the current move to Howard Street is the most massive move in the Academy's history, it is not the only such undertaking. The photos below capture some moving moments from the Academy's past.



December 1957. Moving the large redwood round into the new Eastwood Hall of Botany, via the Simson African Hall entrance.

PHOTO: CAS LIBRARY (N16894)

August 1952. Instrument Shop staff moving the heavy main hub and axial tilt wedges of the Star Projector towards the Morrison Planetarium for installation. The completed projector would weigh 5,000 pounds.

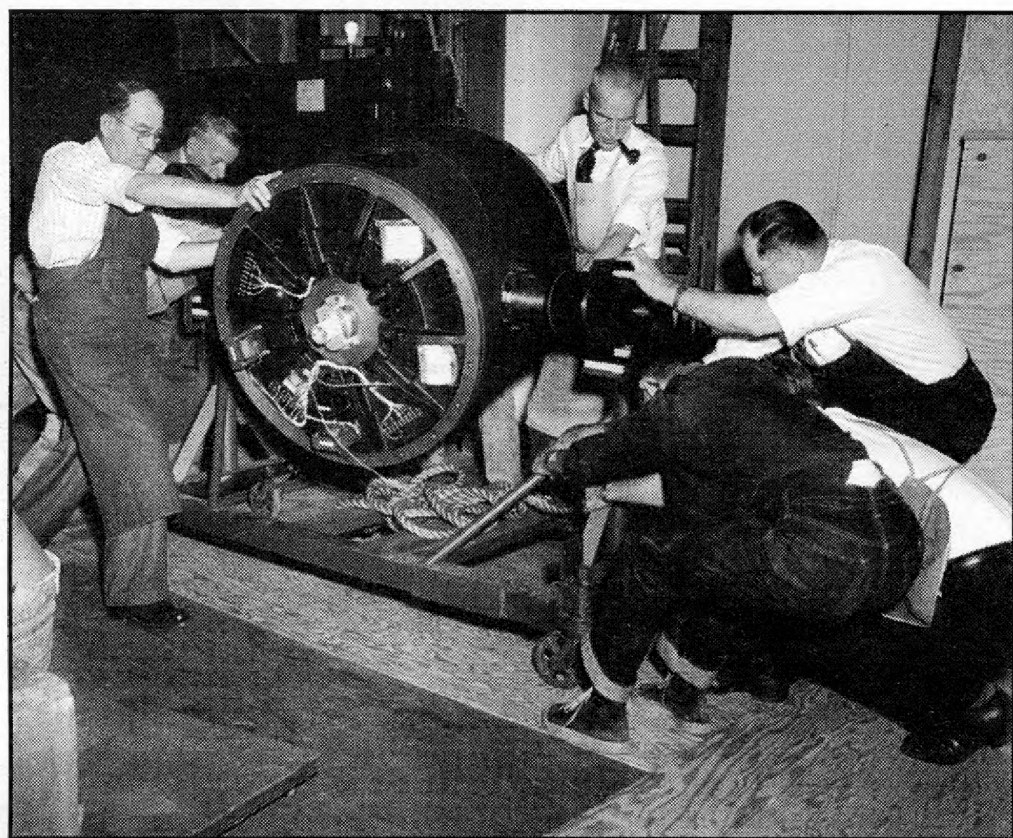


PHOTO: ELMER MOSS/CAS LIBRARY (N3537)



March 1976. LeRay Mecham, Ed Miller, George Blasiola, and Richard Lacer moving the Steinhart Aquarium anaconda.

PHOTO: CAS LIBRARY (N22808)

Early 1950s. Toshio Asaeda unloading the rhinoceros skeleton that he would prepare for exhibit in African Annex.

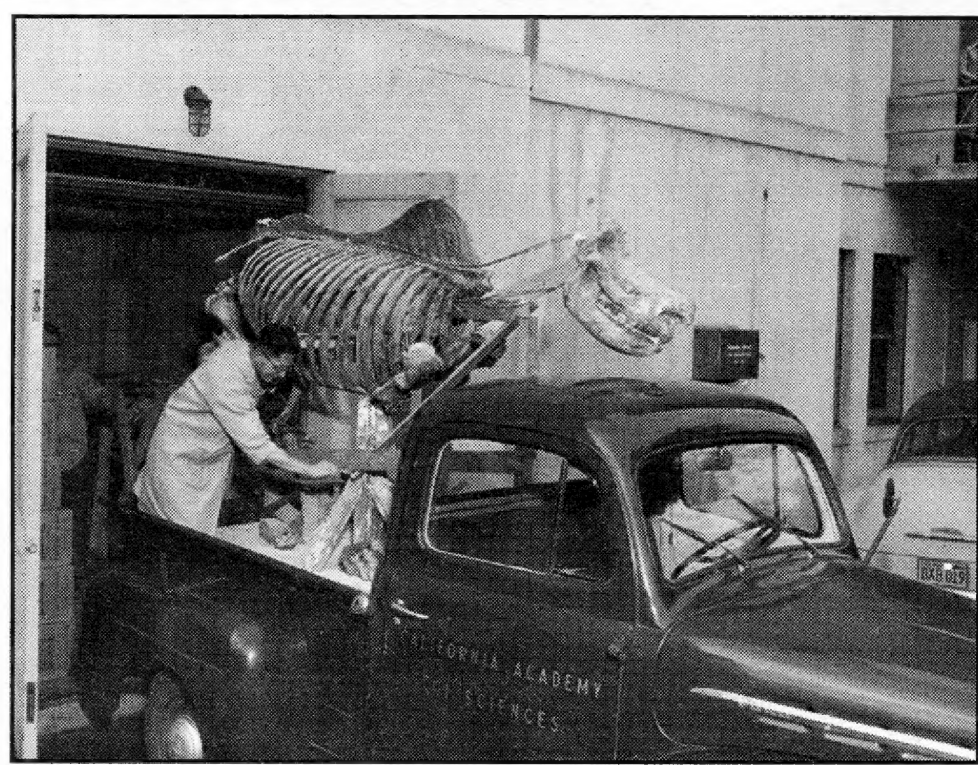


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Academy Travel 2004

FAMILY DINOSAUR DISCOVERY

July 24–30, 2004

With Carol Tang and Jonathan Cooley

This western Colorado adventure provides a perfect opportunity for families to vacation deep in red-rock country while learning about a subject that children never tire of – the mysterious dinosaur! In the Grand Valley of the Colorado River, families with children ages seven to sixteen will dig side-by-side with scientists in an active quarry where bones from eight species of dinosaurs have been found. Families will also raft on the Colorado River, hike in the Colorado National Monument, and travel to 9,000 feet to prospect for plant and animal fossils on high mountain Douglas Pass.

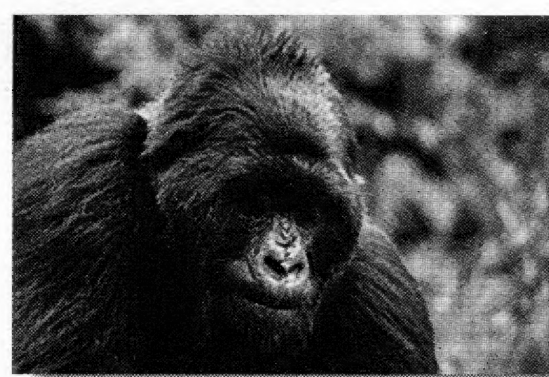
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PRIMATES OF EAST AFRICA

August 26–September 9, 2004

Extension to Bwindi Impenetrable Forest, September 7–13, 2004

With Nina Jablonski and George Chaplin



Join two of our most popular Academy leaders as they return to East Africa in August on a unique customized itinerary that highlights the diversity of our closest primate relatives. While enjoying deluxe accommodations and the group's private mobile tented camp, venture into three game parks in Kenya and Uganda to observe chimpanzees, colobus monkeys, vervets, olive

baboons, and the nocturnal bushbaby in a breathtaking variety of habitats. Along the way, generous numbers of some of Africa's signature mammals and birds – including elephants, zebras, lions, hippos, and flamingos – will also be present. Travelers may choose to extend their stay and explore Uganda's Bwindi Impenetrable Forest, home to half of the world's remaining mountain gorilla population. Throughout the program, George and Nina will discuss the evolutionary threads that connect humans to the species you are fortunate enough to observe each day.



Cost: \$8,890 (based on double occupancy) per person plus airfare
Extension prices available upon request.

i The Travel Office will not be doing a general brochure mailing for these two tours. Brochures will be sent upon request only. For reservations or brochure requests, please call the Academy Travel Office at (800) 853-9372 or e-mail calacademy@hcptravel.com

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Want to know the latest information about 875 Howard Street? Need a reminder about an upcoming lecture, education course, or public program? Get this and more when you sign up for Academy Bytes, a monthly e-newsletter all about Academy events. Send an e-mail to info@calacademy.org with "Academy Bytes" in the subject line.

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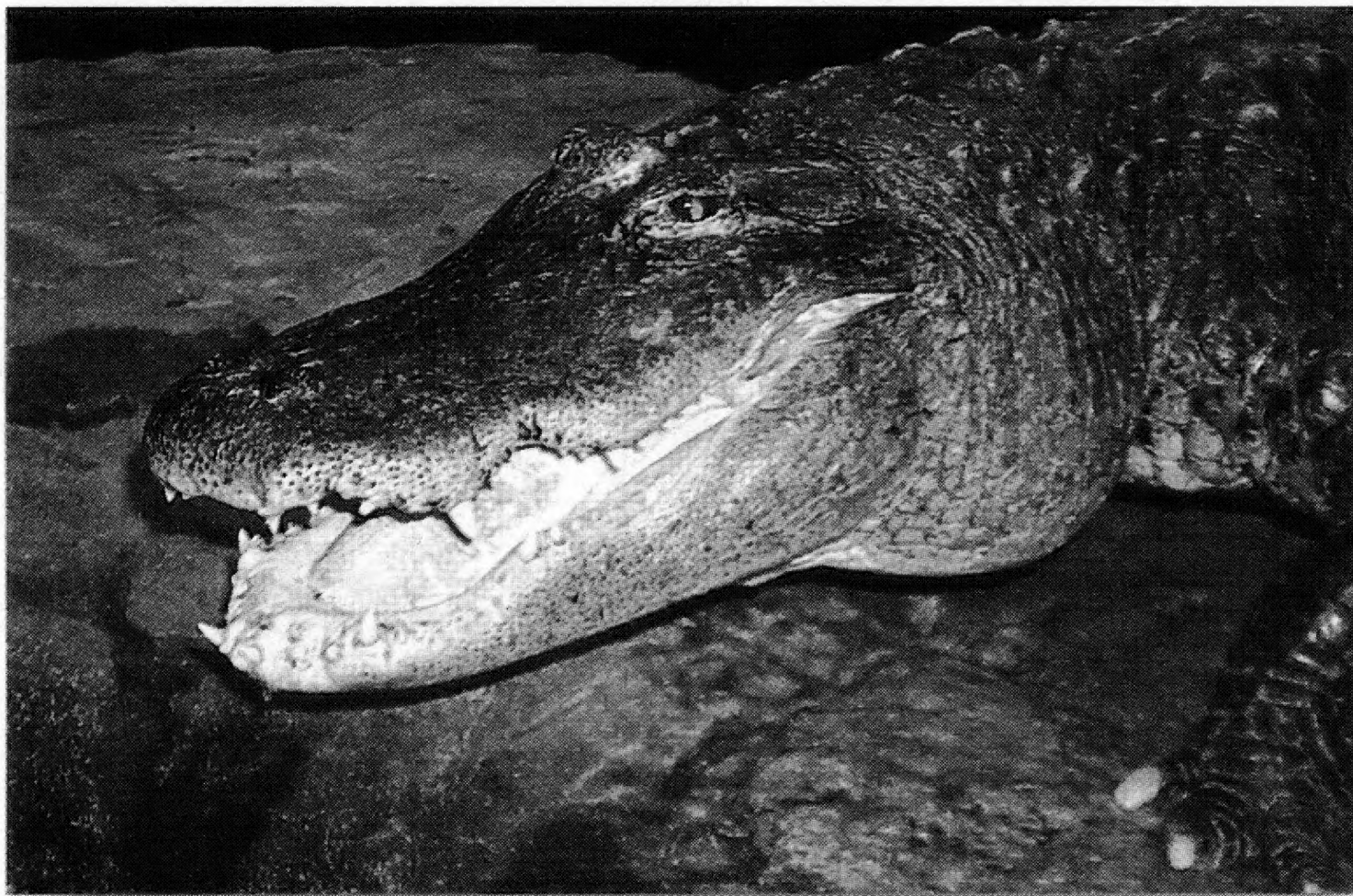
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See Ya Later, Alligators



Today we say goodbye to our alligators, but the Swamp in the new Academy will feature young, new alligators.

of their days in sunny Georgia. However, plans are complete for a bigger and better Swamp that will feature young new alligators once the new Academy reopens in Golden Gate Park in 2008. Visitors to the new Swamp will be able to watch these animals grow over time. Swamp alumnae will recognize the old neo-classical design, but will also enjoy some surprising enhancements, including the ability to look up at the alligators from underneath their tank.

This isn't the first time we've had to say farewell to our alligators. During the 1962 Aquarium Renovation, the director of the Academy bid adieu to our reptilian friends with a quick, "See ya later, alligators."

When the Academy's Swamp was first created, its design did not allow the alligators to "haul out" of the water to bask in the sun beaming down from the skylights. Additionally, a low railing allowed visitors to throw or drop items into the water, where they were often eaten by the gators. In 1960, William Granatir, M.D. sent a photograph from his visit to the Academy that depicted a gator "purse snatching" incident. Granatir wasn't the only person to document the event. International media reported that a "pretty 22-year-old Swedish girl" dropped her purse into the swamp and had it snapped up like a wad of gum. An hour later, it was spit out, minus small change, with her passport and paper money still intact. The Academy could have used the cash for the upcoming renovation, but sent it to the Swedish Embassy instead. This incident was one of many that sparked the Swamp's 1962 renovation, during which the present rock island, plantings, and a waterfall were added. To accomplish the renovation, the alligators had to be temporarily removed.

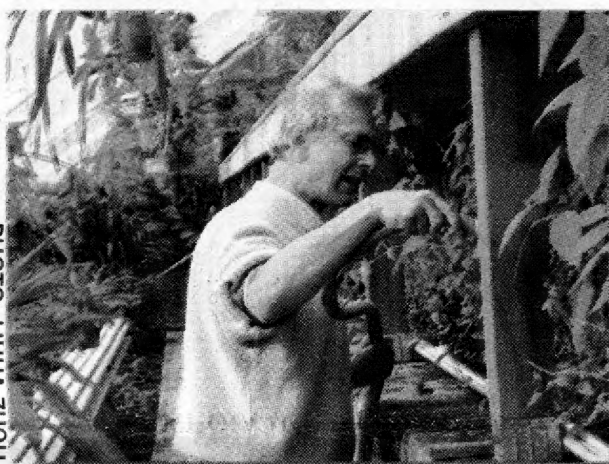
Today, it is time to say goodbye to the alligators once again, since the temporary Academy at 875 Howard Street will be unable to accommodate the large animals.

This time, they will retire from the Academy permanently and go to spend the rest

— Tom Tucker
Aquarium Curator

Shrimp Plant Systematics

An Academy botanist travels to Madagascar to fill in missing branches on the shrimp plant family tree.



Tom Daniel, Ph.D. cultivating shrimp plants from Madagascar at the Conservatory in Golden Gate Park.

Burdened by increasing population pressures, the people of Madagascar are rapidly turning the island's forests into rice fields. In the second half of the twentieth century alone, half of the country's remaining forests disappeared. Unfortunately, these lands are home to an amazing number of endemic species – plants and animals that cannot be found anywhere else on Earth.

Among them are plants like the Madagascar periwinkle, which is now the drug of choice for childhood leukemia. Many other endemic plants and animals in Madagascar have yet to be discovered and described. Academy botanist Tom Daniel, Ph.D. is working to fill in some of these blanks by studying the island's shrimp plants (Acanthaceae family), which get their name from the reddish, shrimp-shaped flower clusters that some species bear.

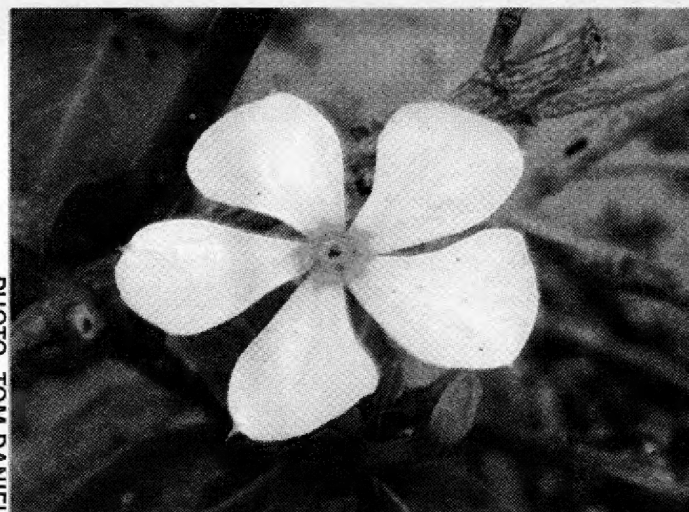


PHOTO: TOM DANIEL

Madagascar periwinkle (*Catharanthus roseus*) is an endemic plant that is used to treat childhood leukemia.

Daniel recently returned from a month-long expedition to Madagascar, where he collected about a hundred different shrimp plants – some of which may prove to be new species once he examines them thoroughly at the Academy. So far, scientists have documented about 400 shrimp plant species in Madagascar, of which over 80% are endemic to the island. These

numbers make Madagascar one of the centers of evolution and endemism for the shrimp plant family. Daniel is hoping to work out some of the evolutionary pathways and migration patterns of these plants by studying their DNA. For each plant he collected, Daniel stored a few young green leaves in a pouch of silica sand, which preserves the tissue for later DNA analysis. Some shrimp plant genera are present only on Madagascar and in the West Indies – one of the biogeographic puzzles Daniel hopes to address with his current research.



An endemic shrimp plant, *Barleria her*, in southern Madagascar.

PHOTO: TOM DANIEL

— Stephanie Greenman
Marketing & Communications Associate

Volunteer Profile

On to Howard Street

"When I retired, first I wanted to clean out my closets, and then at the top of my list I wanted to become an Academy docent." That wish came true in 1995 when Lou Anne Martin joined the docent program and began a whole new career. You should be careful what you wish for. Lou Anne is now the docent chair in charge of leading over 200 docents through one of the most challenging periods in the Academy's history. Not since Alice Eastwood saved botanical specimens during the 1906 earthquake has there been so much to do.

A 29-year-veteran teacher of first and second graders, Martin annually brought her pupils to the Academy, relishing every opportunity to introduce them to natural science. Martin's love affair with education is a family matter. The same year she was recognized by her peers with a "Teacher of the Year" award, her husband Everett, also a docent, was honored as "School Administrator of the Year." "I get so much from this program; the docent camaraderie, the opportunity to learn from Academy scientists, the enrichment of my travels, and the strengthening of my observational skills," she said. "The Howard Street move will be an extraordinary time to broaden docent horizons, and to see if the adaptive capabilities of its members can reach far and

wide to other audiences, whether they are convention participants, downtown museums, or local residents."



PHOTO: DONG LIN

Lou Anne Martin, Academy docent

"This is a great chance to develop novel programs and experiment with new concepts. Although the exhibit area will be small, the exotic repertoire of the Academy's collections will be represented. You would have to travel the globe to see such an assortment of creatures." True to form, Martin's enthusiastic endorsement of and commitment to the docent program will far exceed her typical 110 percent. As usual, she'll be working hard for the benefit of all who come here to be inspired by the natural sciences.

— Rosalind Henning
Volunteer Services Manager

i If you are interested in volunteering at the Academy, please call (415) 750-7154.

Corporation and Foundation Support

The California Academy of Sciences is delighted to acknowledge the **Lakeside Foundation** for its unrestricted gift of \$50,000. The **Barkley Fund** is also thanked for its generous grant of \$50,000 for general operations. The **Bella Vista Foundation** awarded the Academy \$25,000 in support of research for its SF Bay biodiversity survey, "SF Bay 2K." The Academy welcomes the Bella Vista Foundation into the community of major contributors to our institution.

Miranda Lux Foundation has again supported the Academy's Careers in Science Program with a gift of \$12,500. **McDonald's** is thanked for \$10,000 in corporate support. The **Thelma Doelger Charitable Trust** is thanked for its generous unrestricted gift of \$5,000, as is the **Markkula Foundation's** gift of \$1,500.

This support helps the Academy fulfill its 150-year-old mission to "explore and explain the natural world."

Run To The Far Side® 2003

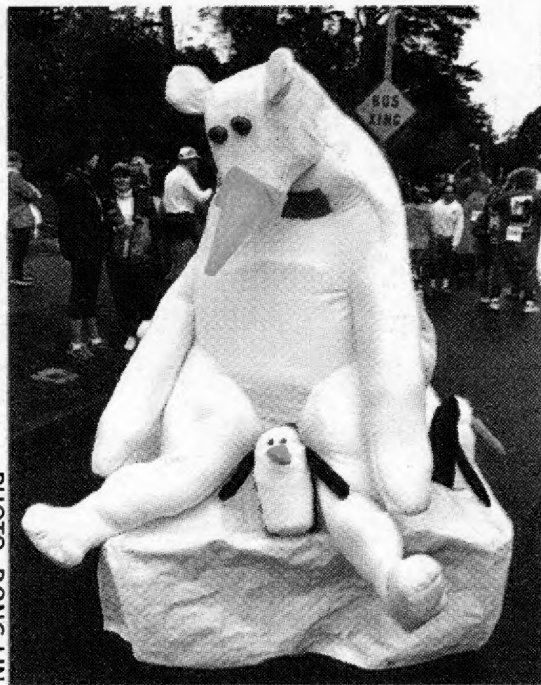


PHOTO: DONG LIN

This Polar bear and accompanying penguins won first prize in the costume contest.

Airlines, Starbucks, Promax, Aquafina, Tropicana, KFRC, Niketown, Hotel Adagio, Biscotti di Suzy, Motion Potion, JBz, PacWest Athletics, and Supershuttle.

Thanks especially to **RhodyCo Productions** for 19 years of expert organization of the event, and to the dozens of volunteers that make each annual run a marvelous experience.

Following the 19-year-old San Francisco tradition of burning off Thanksgiving dinner for a good cause, the California Academy of Sciences hosted the Gary Larson-inspired "Run To The Far Side®" 5k and 10k runs on November 30, 2003. This year's theme, "The 100-Meter Mosey," was accompanied by thousands of runners, wacky costumes, and delightfully torrential rains. But spirits were up, and the Academy is grateful for generous underwriting by the following corporate sponsors:

Blue Cross of California, San Francisco Chronicle, KRON4, Andronico's Market, Alice@97.3, SFGate.com, Southwest

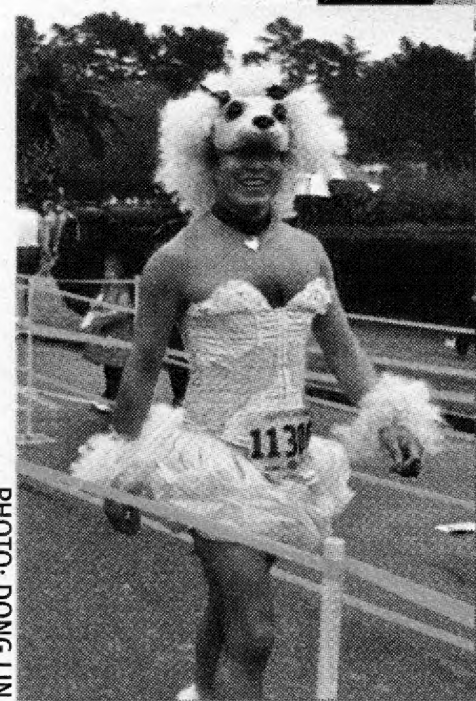


PHOTO: DONG LIN

(above) Competing in the 5K, Jason Lunn won the event with an impressive time of 14:33 minutes.

(left) Fun, costumed characters were seen competing in the 5K run.

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September and October 2003: \$125 to \$999

Many thanks to the following new donors and those who have increased their support of the Academy recently.

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Golden Gate Park Collection donated to the Academy Archives

The Academy is thrilled to have recently received the extensive Raymond H. Clary Collection, donated in Mr. Clary's honor by Donna Ewald Huggins. Mr. Clary was the author of *The Making of Golden Gate Park: The Early Years, 1865-1906*. His collection includes the materials he compiled while researching his book, and hundreds of souvenirs and items related to the 1894 Midwinter Fair. The de Young Museum and the California Academy of Sciences occupy space in Golden Gate Park that was previously home to Midwinter Fair exhibition halls.



Botany Club Members Celebrate Their Academy Roots

Did you know that the pumpkin is the largest fruit, that the oldest tree is California's bristlecone pine, and that the largest flowering plant is the rafflesia of Southeast Asia? One species from the rafflesia family measures over two feet wide, and you can't get near it because it smells so bad (like decaying meat)! These are just a few of the interesting facts known to members of the California Academy of Sciences' Botany Club. For over 110 years, plant lovers have met with Academy specialists to expand their knowledge and participate in research projects. Most

recently, a reunion was held to celebrate the club's rich history and to learn about the exciting plans for the Academy's future.

Botany Club members share a commitment to the work of the Academy's curators and other researchers. Several of them are involved with the Eastwood Associates, our recognition council for those who have made



PHOTO: LOUISE GREGORY

Botany reunion, November 11, 2003 (left to right): (back) Sue Hossfeld, Ida Geary, Kay Best, Elou Denicke, Wilma Follette, Ted Kipping, Ros Day; (front) Phyllis Faber, Ken Howard, Eva Buxton, Frank Almeda, Doreen Smith, and Carol Weiske

legacy gifts to the Academy in their wills or trusts. Some, including Sue Hossfeld, have restricted their donations to the Botany Department. Sue says, "My attorney helped me use a charitable remainder trust to increase my own income while also supporting the Academy, as well as other charities." According to Frank Almeda, Ph.D., McAllister Chair in the Department of Botany, "Sue's generosity has inspired others within the Botany Club, and I am delighted to have such committed supporters of our work."

i If you would like to know more about the Botany Club or how to remember the Academy in your estate plans, please contact Louise Gregory at (415) 750-7354 or via e-mail at lgregory@calacademy.org.

Eastwood Associates

We are pleased to honor the 117 generous friends who have included the California Academy of Sciences in their estate plans. The commitments of these forward-looking individuals ensure that future generations will benefit from the Academy's research, exhibits, and educational programs.

Anonymous (23), Mark and Michele Aldrich, Frank and Mary Beth Almeda, Barbara D. Andrews, Dr. and Mrs. Paul Arnaud, H. Arnaud, Jr., Nancy A. Baker, Ms. Pamela Baldwin, Paul H. and Madeline M. Arnaud, Raymond and Alkmene Bandar, Charles Madsen Barksdale, Marie S. Bartee, Joan L. Beavin, W. Richard Bingham, Mr. Norman Brand, James R. and Melinda M. Brown, Shawn and Brook Byers, Betty Criley Carman, Mr. and Mrs. Michael Casey, Grayce Ceschi, Dr. and Mrs. William A. Clemens, Mr. and Mrs. Lewis W. Coleman, Dr. and Mrs. Gerald A. Corsi, Mr. and Mrs. Thomas H. Day, Mr. and Mrs. Mervyn R. Dowd, Jr., Mr. and Mrs. Thomas E. Dum, Mrs. Richard Dumke, Mrs. Jane B. Dunaway, Harold and Margo Elberg, Neil E. Fahy, Lawrence and Marie Feldman, William Foster, Miss Muriel T. French, Mr. William Fries, II, Mr. Stuart M. Fullerton, Mr. Robert G. Glavin, Dr. Florence Haimes, Dr. and Mrs. Douglas Hamilton, Stephen Hart, Mr. George G. Hawxhurst, Mr. and Mrs. James A. Heagy, Mrs. Yaye F. Herman, Mrs. John F. Holman, Susan Hedge Hossfeld, Mr. and Mrs. William J. Hume, Ms. Virginia M. Ingham, Mr. William R. Kimball, Ms. Charlotte F. Klock, Dr. Ruthann Knudson, Sharon A. Landwehr, Robert and Evelyn Langston, Lois B. Lippincott, Brent H. Malarkey, Ms. Josephine Markovich, Michael R. Marron, Richard L. and Faye A. McCartney, Dr. and Mrs. John E. McCosker, Mr. Charles H. Merrill, Mr. & Mrs. William J. Michaely, Drs. Craig and Natalie Miller, Mr. Kendrick W. Miller, Charles M. and Carol C. Mink, Nancy and Bill Newmeyer, Ms. Diane Ososke, Alan and Virginia Pabst, John and Vicki Pearse, Mr. and Mrs. Albert M. Price, Wojciech J. Pulawski and Veronica Ahrens-Pulawski, Mr. & Mrs. Hugh E. Reynolds, Anne M. Rianda, Elizabeth D. Rieger, Jeanne Rose, Mr. John J. Rose, Dr. Edward S. Ross, Dr. Sandra M. Ross, Mr. and Mrs. Michael J. Ross, Lloyd B. Ryland, Harold E. Segelstad, Mrs. Eugene A. Shurtleff, Clare Wheeler Sias, Mrs. Marjorie Silver, Edward Laidlaw Smith, James and Joyce Smith, Clare H. Springs, Thoralee C. Squair, Mrs. Marshall Steel, Jr., Dr. Joan E. Steinberg, Harry and Sylvia Steingart, Mrs. W. Carroll Tornroth, Stefan Unnasch, Shirley Victor, Mrs. Helen von Ammon, Janet von Doepp, Mrs. Frank M. Walch, David Whitridge, Mr. and Mrs. Henry C. Williams, Ron P. Wilson, Dr. and Mrs. Elwood C. Zimmerman

i If you would like to know more about the Eastwood Associates or how to remember the Academy in your estate plans, please contact Louise Gregory at (415) 750-7354 or via e-mail at lgregory@calacademy.org.

Yunnan, China: Notes From The Field

Since 1998, the California Academy of Sciences has been working with China's Kunming Institutes of Botany and Zoology to assemble a comprehensive biodiversity inventory for Yunnan Province, which has become a last resting place for a number of endangered species. Academy photographer Dong Lin and I accompanied the Academy's most recent expedition to document their progress and send updates back to Academy visitors. Here are a few of our dispatches. All photos taken by Dong Lin.

Wednesday, October 22, 2003 Entomology Encounter

Yesterday afternoon, we arrived in the one-street town of Qiushi, which is tucked into the foothills of the Gaoligong Mountains in Yunnan's Baoshan Prefecture. During the drive from Kunming, we were flanked by a striking combination of natural and manmade marvels, ranging from hot springs that sent streams of steam spilling down the distant deep green slopes to vast jigsaw puzzles of farmland that featured houses adorned with bright garlands of yellow corn cobs and potent red chili peppers.

The Entomology and Botany team was waiting for us in Qiushi, and we arrived in time to fit in a few hours of collecting along the Lancanjiang River before dinner, followed by a night collecting trip after dark. During the day, the entomologists combed the rocky river banks in search of beetles, and found several carnivorous Carabids, including one member of the *Omophron* genus that has been documented only once before, as well as a new species from the *Leistus* genus. *Leistus* beetles are distinctive for their mandibles, which help them to grasp the smaller insects they prey upon. Academy Research Associate Tom Briggs also collected a striking, emerald green harvestman that he believes may represent a new species. Related to spiders, harvestmen have long, gangly legs and normally range from brown to black in color.

After dinner, the team returned to the field to set up a light trap, which consisted of a pair of black and white lights hung up against the backdrop of a bright white sheet. Within minutes, the trap attracted hundreds of moths, as well as an adult Antlion lacewing, which was a particularly prized find for lacewing specialist Norm Penny, the Collections Manager of the Academy's Entomology Department. Lacewings spend most of their lives as larvae and only grace the skies with their delicate wings for two or three weeks, so it is rare to find them as adults. During the past few days, Norm has also collected about a dozen lacewing larvae, which he hopes will hatch after he brings them back to the Academy.

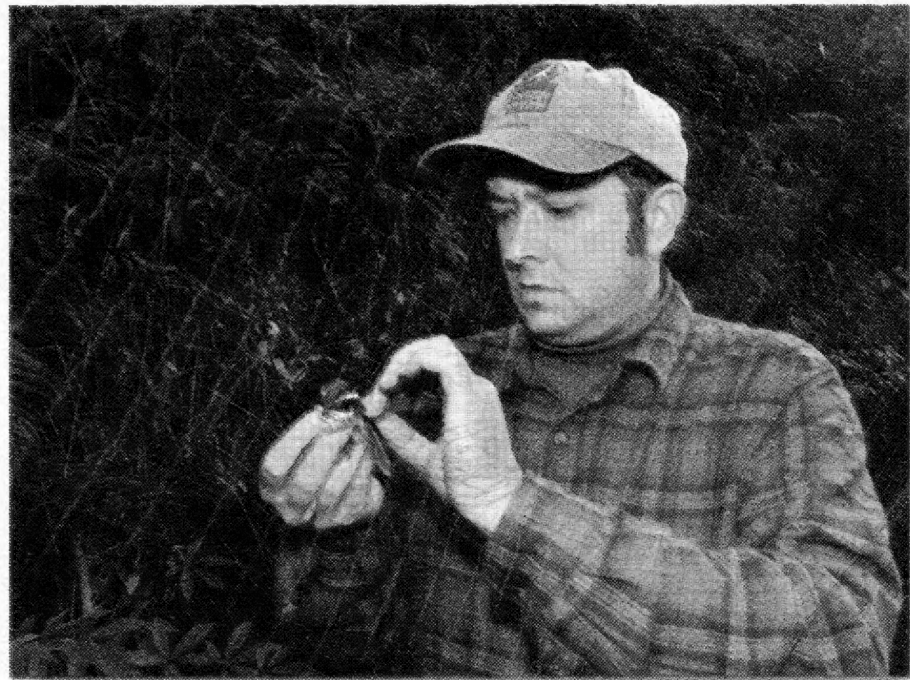
Tomorrow, we will head higher up into the mountains to find terrain that has never before been surveyed by scientists.

Tuesday, October 28, 2003 A Wet Wonderland

We are just a few steps from the Burmese border, on the top of a peak that reaches nearly 10,000 feet – a relatively low crest for the Gaoligongshan. Below us, a thick fog has settled into the Mingyong River Valley, and a few gnarled fingers are slowly creeping up the drenched, green slopes. Here, within the bounds of the Yunnan Gaoligongshan National Reserve, commercial logging has been banned, and the rainforest is thick and soft, filled with moss-covered branches that sprout fresh green ferns and giant rhododendrons that tower over the undergrowth with their broad, leafy umbrellas.

The Birds and Mammals team has spent the past few days surveying the wildlife in this wet wonderland, and they have already recorded a number of rare birds, including the streak-throated barwing (*Actinodura waldeni*), the Daurian Redstart (*Phoenicurus auroreus*), and

a brightly colored chestnut-tail (*Minla strigula*). Each day, the ornithologists set up nets in several locations, choosing different types of habitat to attract a wide range of species. They then check the nets



Douglas Long, Collections Manager, Birds and Mammals Department

periodically to disentangle any birds that have flown into the mesh and record important specimen data. Yesterday, a small leopard cat beat the scientists to their rounds and left a few avian feet and feathers at the scene of the crime.

While the ornithologists work to compile a comprehensive list of the region's birds, the mammalogists are focusing on small mammals like mice, shrews, and squirrels. Southeast Asia is considered to be the hotbed for squirrel evolution – more squirrel species have evolved in this region than anywhere else on Earth. Douglas Long, the Collections Manager for the Academy's Ornithology and Mammalogy Department, has designed a new squirrel trap that can be attached to trees and is hoping it will help him to catch some of the region's unique squirrels. In the meantime, he is working to prepare a study skin for a small mammal called a gymnure, which the team caught yesterday. Scientists have yet to determine the gymnure's place on the evolutionary tree, although it likely fits in somewhere between hedgehogs and shrews. Douglas has taken tissue samples from the liver and muscles, which can be used to conduct DNA analysis.

Thursday, November 6, 2003 Tiger's Caves

We are on our way back to our base camp at Tanzigou after spending the day at the nearby site of Laohudong with the Paleoarchaeology team, and even though there is not a sliver of primary forest in sight,

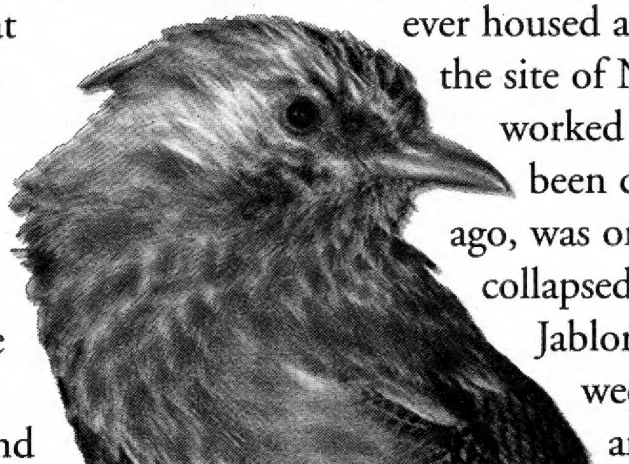


Norm Penny, Collections Manager, Entomology Department

the colors are brilliant in the terraced land around us, and a different kind of beauty abounds. The soil, which has a high clay content, gives off a deep orange glow in the late afternoon light, and the last of the season's chilies hang like shiny red ornaments from the polished green branches of the pepper plants.

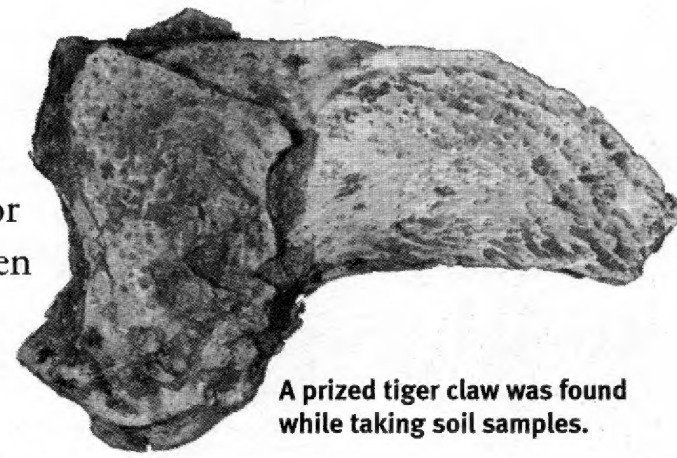
Laohudong is a cave site that holds a dense collection of fossilized bones from medium-sized mammals like porcupines, pigs, and small deer. Carved out by flowing water over hundreds of thousands of years, the cave eventually became a depository for bones that were carried in by the currents. The site has never been accurately dated, so the team visited today in the hopes of finding either charcoal for carbon dating or stalagmites for uranium isotope dating. Late in the day, Academy Research Associate George Chaplin hit the paleontologist's gold mine when he found a chunk of clay that held both burned pine cones and fossilized deer teeth.

When translated, Laohudong means Tiger's Cave, but the passage is actually much too narrow to have ever housed a tiger. The real tiger's cave is at the site of Nanfeng, where the team worked yesterday. This site, which has been dated to about 280,000 years ago, was once a large cave but has since collapsed. Academy curator Nina Jablonski and George spent several weeks working there last year, and they returned this week



Streak-throated barwing (*Actinodura waldeni*)

with their Chinese colleagues to collect some soil samples for pollen analysis. When the team reopened the site to take the soil samples, they had to dig a bit deeper than last year, and the freshly excavated dirt produced a prized tiger claw. This claw, along with some teeth that the team found last year, supports their suspicion that most of the fossils at the site were brought in by large carnivores like tigers.



A prized tiger claw was found while taking soil samples.



Academy curator Nina Jablonski and author Stephanie Greenman at the archeological site of Tanzigou.

Monday, November 10, 2003 Hints about Early Humans

Over the past few days, the team's work has produced a veritable parade of primate fossils, which has been particularly exciting for Academy curator Nina Jablonski, who specializes in primate evolution. The run started on Friday, when the Tanzigou site yielded a tooth from a Phayre's Leaf Monkey – currently one of the most endangered monkeys in China. That first find was quickly followed by a succession of primate fossils on Saturday, when the same pit produced two Loris jaws and a Loris finger bone, along with several Rhesus Macaque teeth. The biggest finds, however, came on Sunday, when the team found three probable human teeth – two from Tanzigou and one from the mouth of the cave at Laohudong.

The two Tanzigou teeth are both incisors, but one came from an adult while the other came from an infant. The infant's tooth was marked by heavy striation, which is a sign that its mother suffered from some sort of serious illness or malnutrition while she was carrying the baby – a plight that was not uncommon for early humans.

The Laohudong tooth, probably a molar from a child around the age of six, was unearthed when George began the meticulous process of washing and sorting through the soil samples that the team brought back from their visit to Laohudong last week. Along with the prized tooth, the rich samples produced two quartz scraper tools and a piece of cord-marked pottery. Some of the world's earliest pottery comes from this region, and while the Laohudong site has yet to be dated, the pottery shard suggests that a human presence at the site lasted until at least 6,000 years ago, when pottery first started to appear here.

Today, Dong and I have to start our long journey home, but the Paleoarchaeology team will continue their work at Tanzigou for another three weeks.

– Stephanie Greenman
Marketing & Communications Associate

For more dispatches and photographs, visit www.calacademy.org/notes_from_the_field.

General Information: (415) 750-7145